



**Massachusetts Bay
Transportation Authority**

Red Line/Orange Line Improvement Program Update

**Vehicle Procurement, Infrastructure Improvements, State of Good
Repair Improvements and Signal Upgrades**

March 05, 2018



OVERVIEW

The following summary provides an update to the Fiscal and Management Control Board on the progress of the Red Line/Orange Line Improvement Program; which includes new Vehicle Procurement, Infrastructure Improvements, State of Good Repair Improvements and Signal Upgrades.

This Program supports the MBTA's goal to improve the Level of Service on the Red Line and Orange Line.



Red Line/Orange Line Improvement Programs

Red Line

Orange Line

NEW VEHICLE PROCUREMENT
PROGRAM

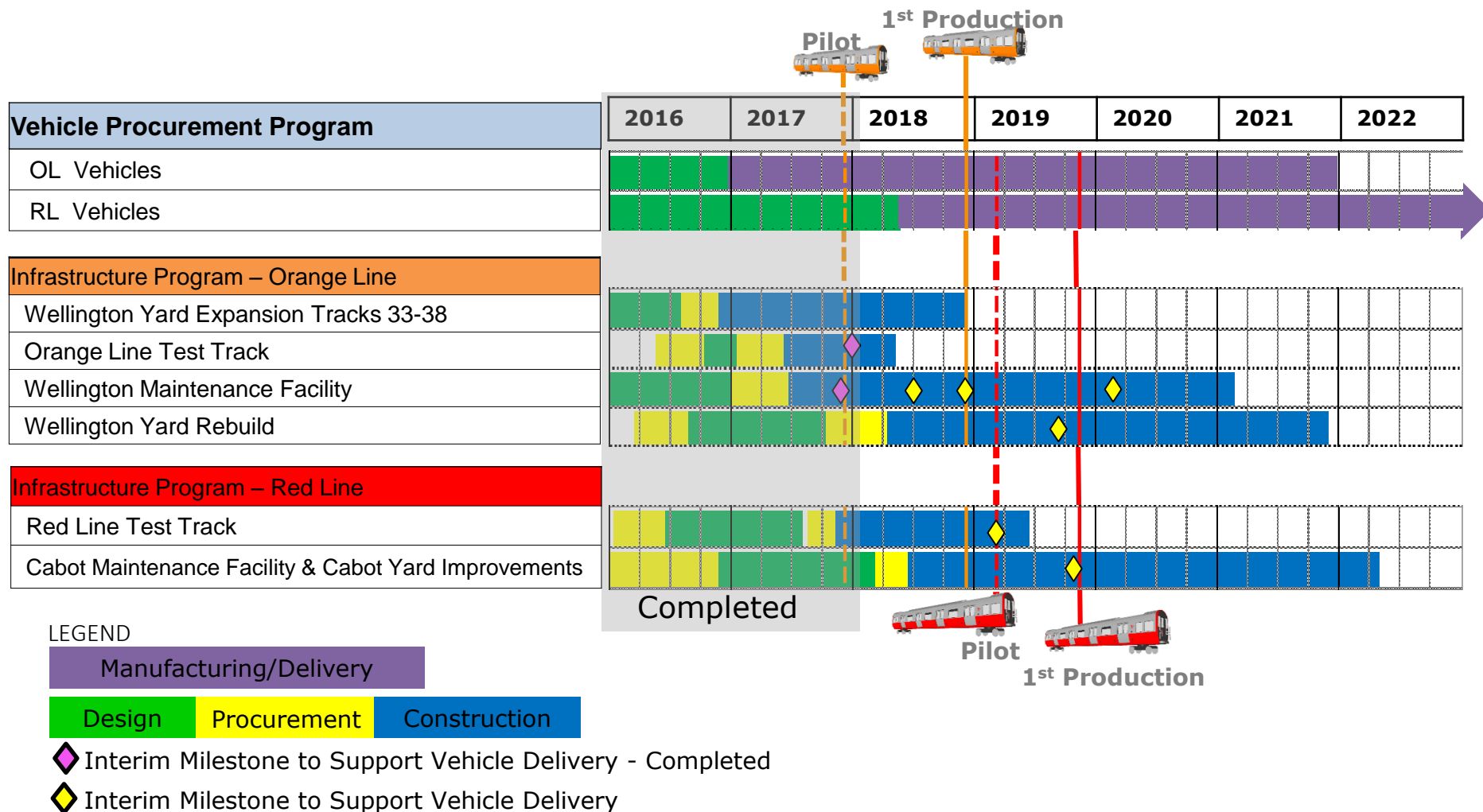
INFRASTRUCTURE IMPROVEMENTS
PROGRAM

STATE OF GOOD REPAIR PROJECTS

SIGNALS UPGRADE PROJECTS

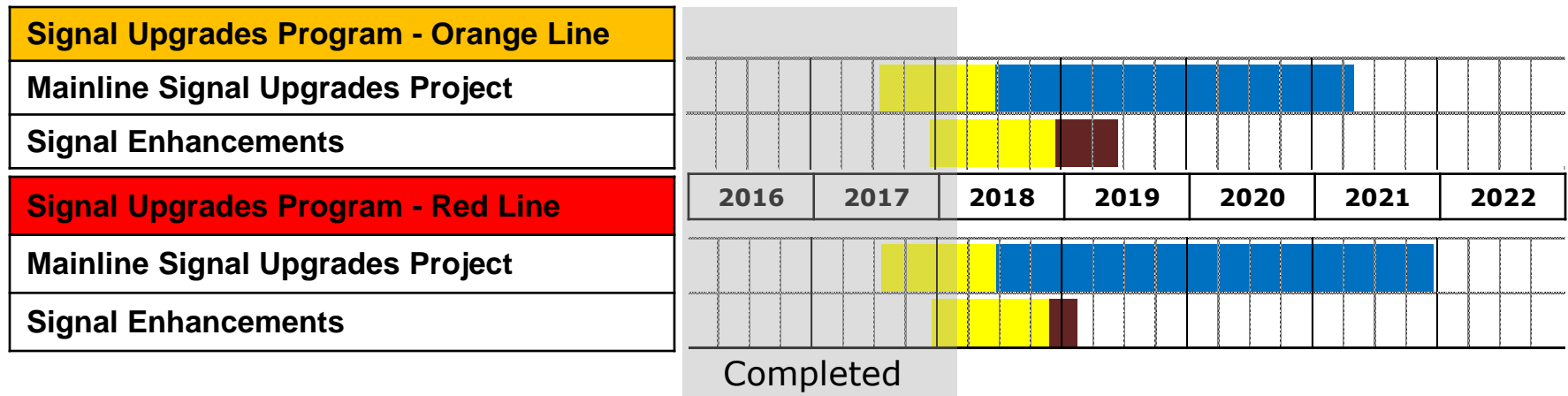


Red Line and Orange Line Schedule by Project





Red Line/Orange Line Schedule – Signals Upgrades



LEGEND

Procurement	Design/Build
Procurement	MBTA Installation



New Vehicle Procurement Program

New Vehicle Procurement Program

Total Project Value: \$ 1,009,871,671

Expenditure to date: \$ 152,862,655

Carbuilder Percent Complete: 16.7%



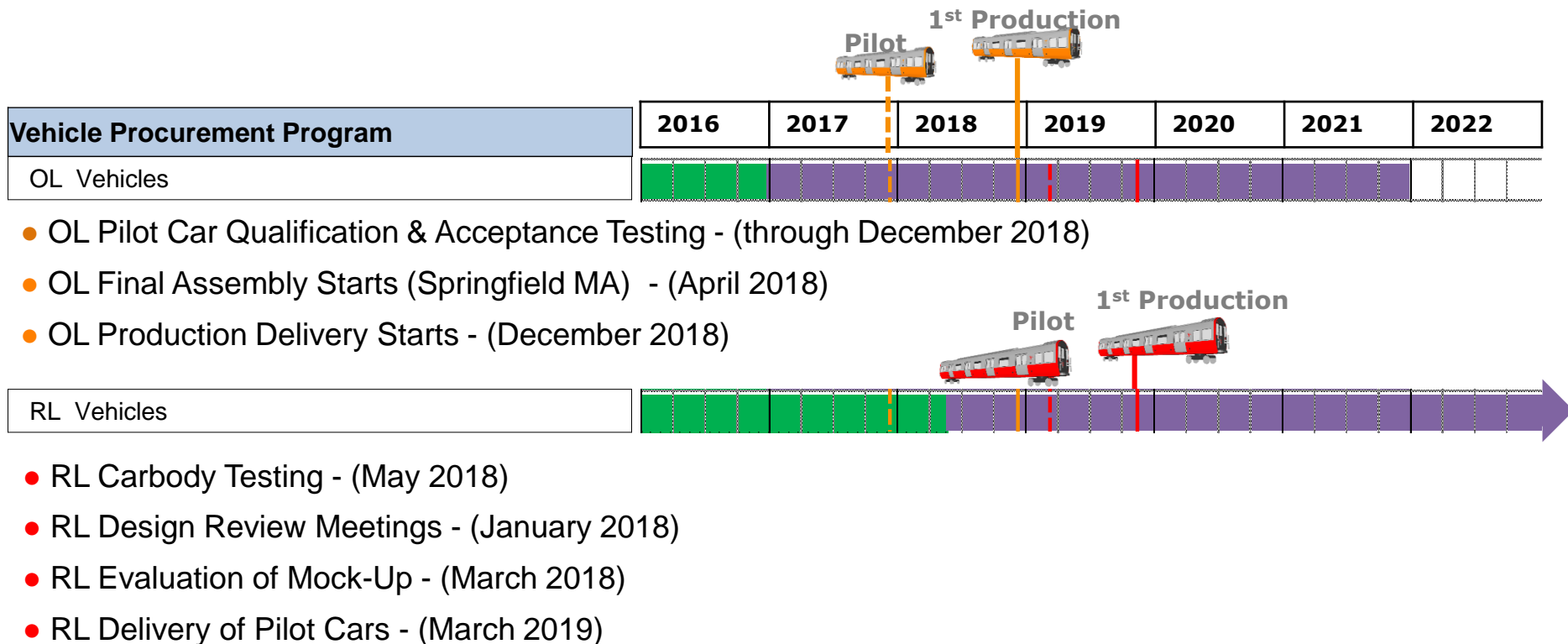
- Replace 218 Red Line cars
- 34 new cars
- Total = 252 vehicles



- Replace 120 Orange Line cars
- 32 new cars
- Total = 152 vehicles



Vehicle Procurement Project Status – Current/Look Ahead





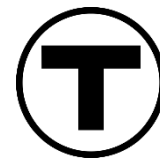
Orange Line Vehicle Procurement Project Status

Wellington - On December 20, 2017, the MBTA received the first 4 Orange Line Cars (pilots) at Wellington Carhouse. The cars are currently undergoing both field modifications and formal witnessed routine and qualification testing at Wellington Carhouse.

Changchun - The remaining pilot cars will undergo high speed and EMI testing utilizing CRRC's dedicated test track. This testing will be completed prior to shipment to Boston.

Carshell production is continuing, with production shell #14 shown below.





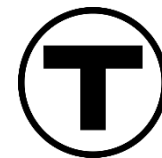
Red Line Vehicle Procurement Project Status

The design process for the Red Line cars is ongoing. Preliminary Design Meetings have been held and Final Design Meetings are scheduled for March, in both Boston and China.

An MBTA review of the Red Line interior and exterior mock-up (shown right) is also scheduled for late March 2018, in Changchun China.

Structural carshell testing is scheduled for May 2018. Construction of the Red Line test carshell is already underway

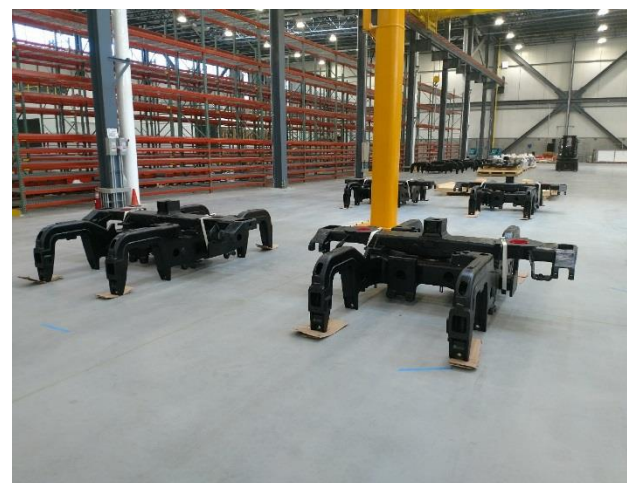


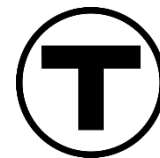


Vehicle Procurement Project Status – Springfield Facility

CRRC MA is progressing with the preparation to initiate final assembly in April. The MBTA is performing weekly audits to validate the advancement of mobilization.

The sequence of work station flow is being modified as material delivery dates become finalized.

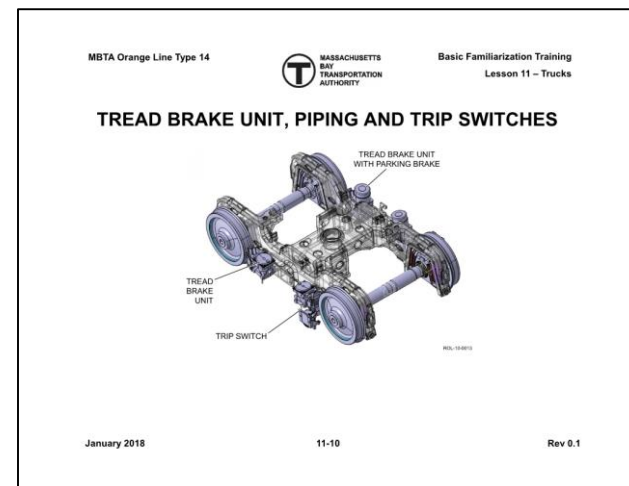




Operator Training

The Project Team and the MBTA Training Department have coordinated a preliminary round training scheduled for the week of March 5, 2018 for the Operators. Key members from the MBTA's Training Departments will validate the content of the course.

This Training module will consist of : Basic Familiarization; Operations and In-Service Training





Orange Line Projects: Wellington Yard Expansion Tracks 33 to 38

JF White

Construction NTP: 12/05/2016

Construction Substantial Completion:

Contractual: 06/23/18

Projected: 06/23/18 (under review)

Construction Budget: \$17,977,777

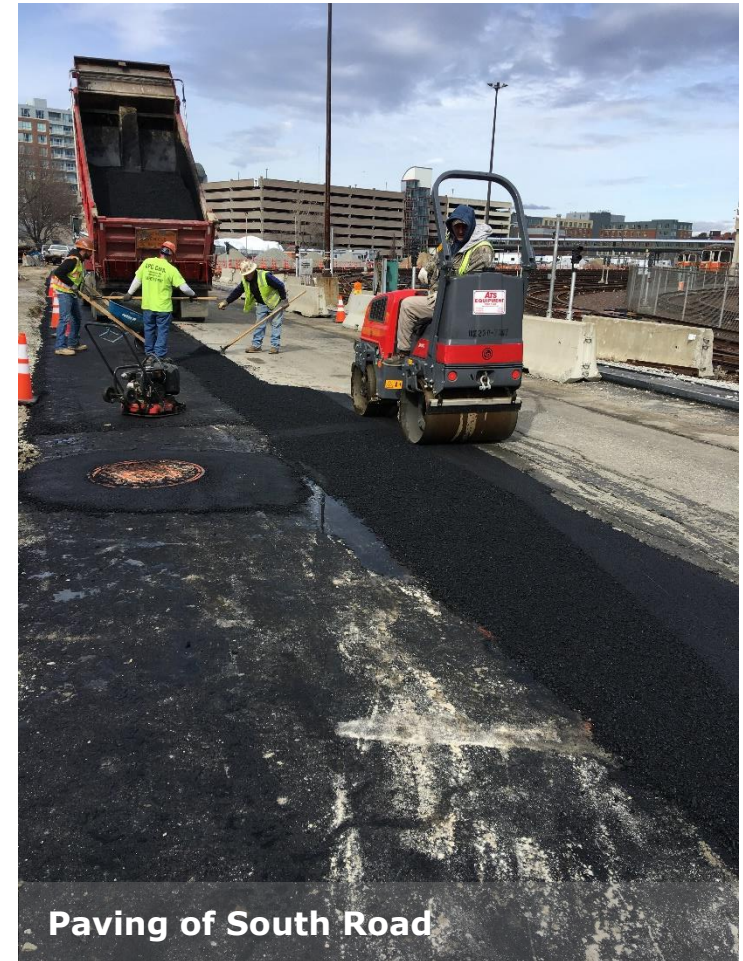
Construction Expenditures to Date: \$2,963,755

Construction Percent Complete: 30%

* Anticipate completing approx. 3 months behind schedule due to unforeseen environmental work



Pre-plating Turnout Operation



Paving of South Road



Orange Line Projects: Orange Line Test Track

LM Heavy

Construction NTP: 06/20/17

Construction Substantial Completion:

Contractual: 09/11/18

Projected: 05/07/18

Construction Budget: \$5,867,000

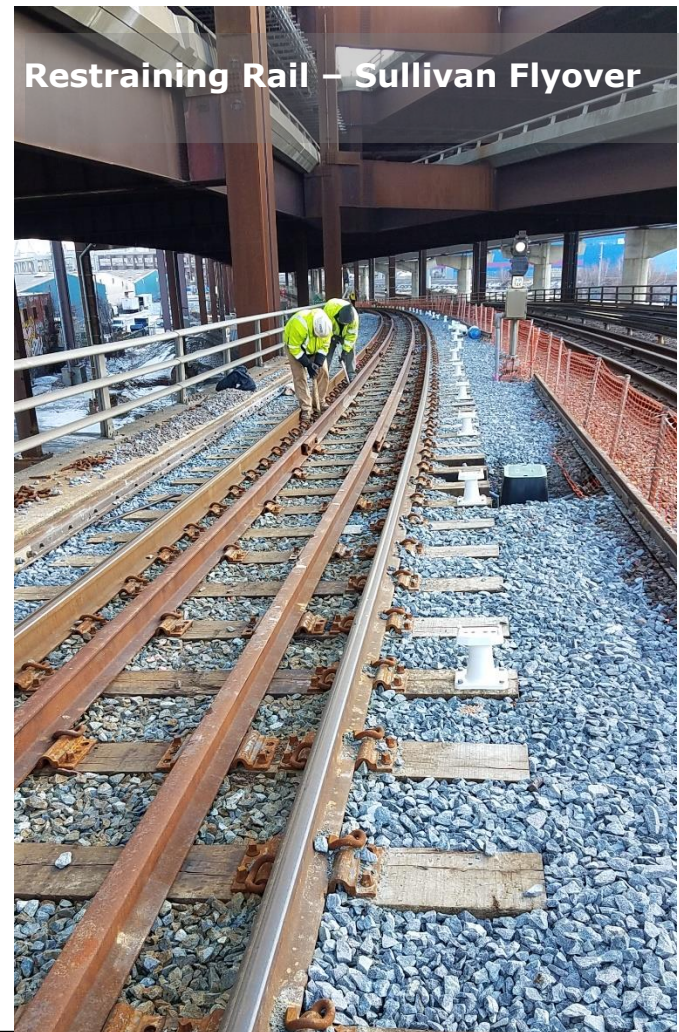
Construction Expenditures to Date: \$3,014,245

Construction Percent Complete: 87%

* Forecast completing 4 months ahead of schedule



Rail Welding – Sullivan Flyover



Restraining Rail – Sullivan Flyover



Orange Line Projects: Wellington Maintenance Facility

Barletta Heavy Division

Construction NTP: 06/30/17

Construction Substantial Completion:

Contractual: 08/04/20

Projected: 08/04/20

Construction Budget: \$72,582,000

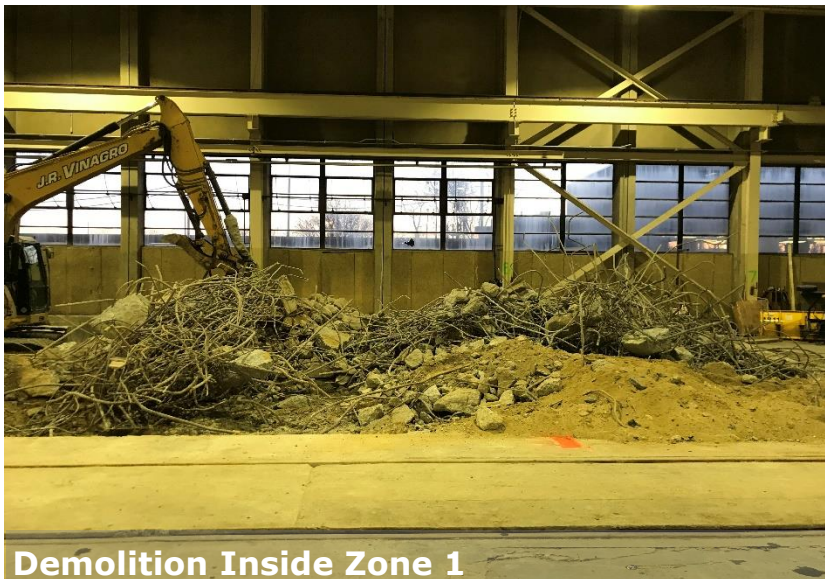
Construction Expenditures to Date: \$1,378,404

Construction Percent Complete: 8%

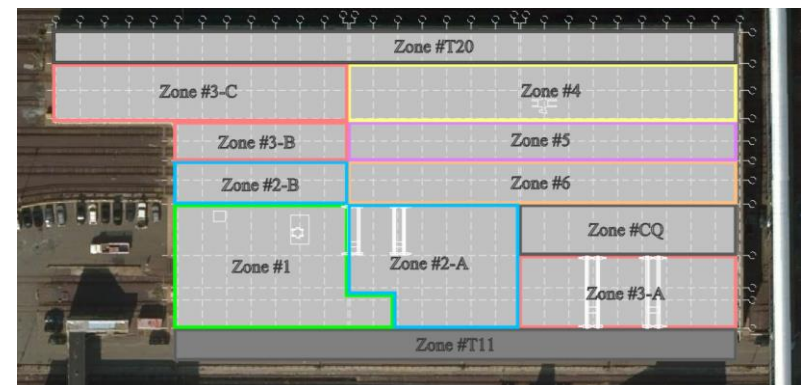
* Forecast completing on schedule

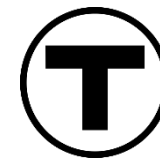


Zone 1 - Pile Installation



Demolition Inside Zone 1





Orange Line Projects: Wellington Yard Rebuild

HNTB

Design 100%: 10/16/17

Advertised: 02/09/18

Construction NTP: 05/09/18

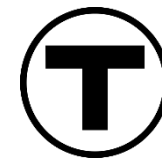
Substantial Completion: 12/20/21

Estimated Construction Budget: \$104M



Wellington Yard Rebuild

Draft for Discussion & Policy Purposes Only



Red Line Projects: Red Line Test Track

Barletta Heavy Division

Construction NTP: 11/17/17

Construction Substantial Completion:

Contractual: 02/20/19

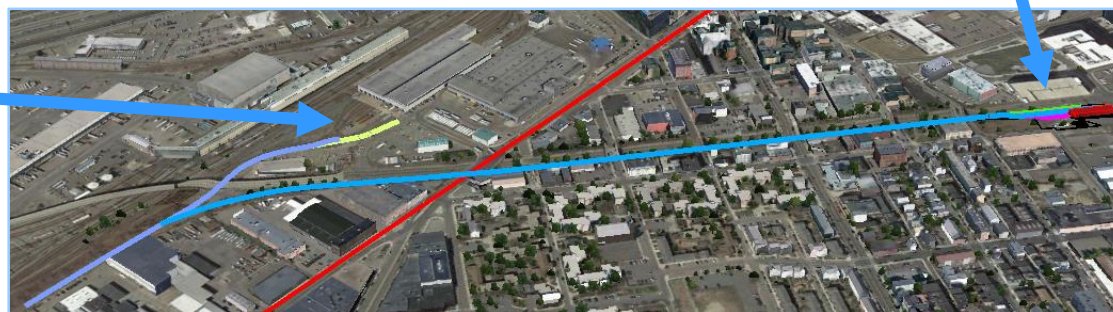
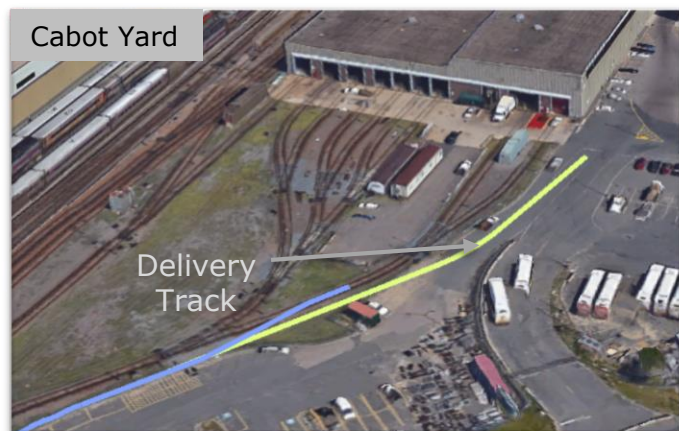
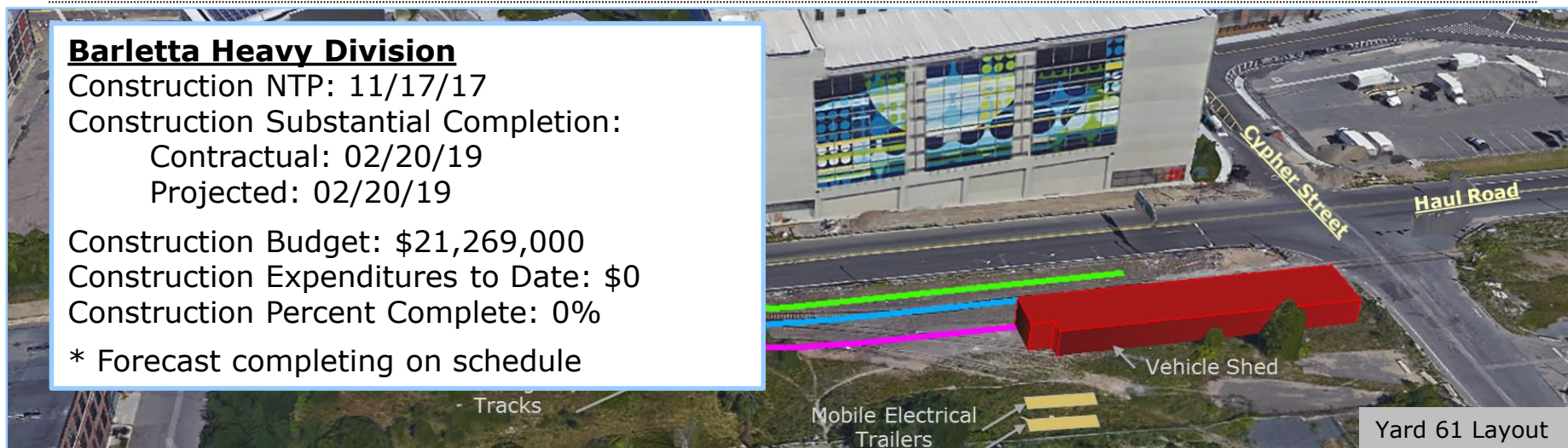
Projected: 02/20/19

Construction Budget: \$21,269,000

Construction Expenditures to Date: \$0

Construction Percent Complete: 0%

* Forecast completing on schedule





Red Line Projects: Cabot Yard & Maintenance Facility Improvements

Jacobs & HNTB

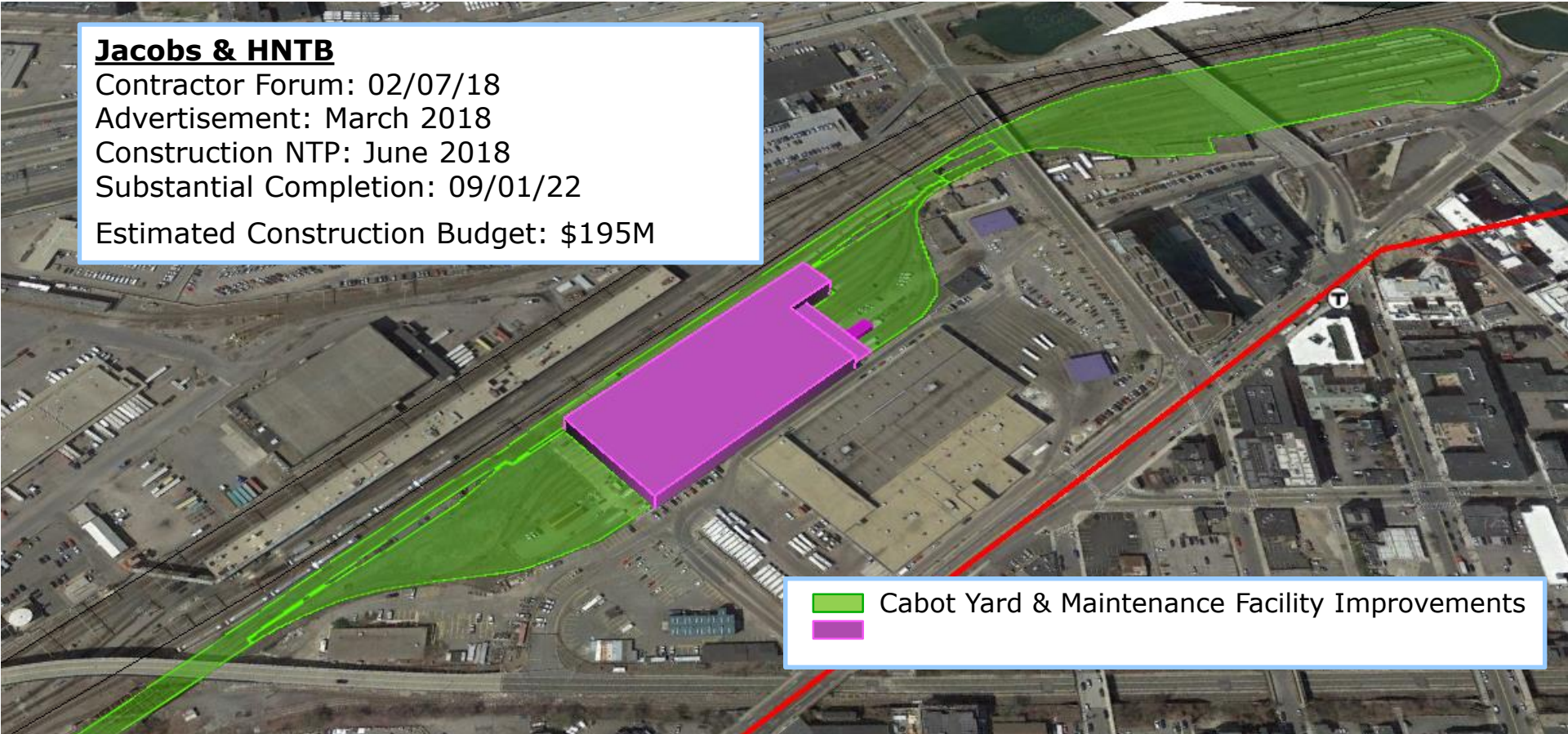
Contractor Forum: 02/07/18

Advertisement: March 2018

Construction NTP: June 2018

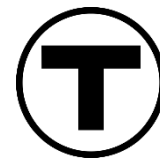
Substantial Completion: 09/01/22

Estimated Construction Budget: \$195M



 Cabot Yard & Maintenance Facility Improvements





Signals Upgrade Projects Status

RFLOI – 08/29/2017
RFQ/SOQ – 10/02/17
Short List Proposers – 1/16/18
RFP Issued – 02/12/18
NTP – 06/30/18
Substantial Completion RL – 05/05/21
Substantial Completion OL – 12/23/21

Red Line

RL Signaling and Train Control System Upgrade
RL Columbia Junction Phase II

Orange Line

OL Signaling and Train Control System Upgrade
OL South West Corridor Wayside Signal Replacement





State of Good Repair Projects Status – Bridge Hardening

Status

Bridge Repairs

RL Substantial Completion – 9/01/18

OL Substantial Completion – 8/01/18

Long Fellow Approach – Interim Repairs

Substantial Completion – 11/10/18

Red Line

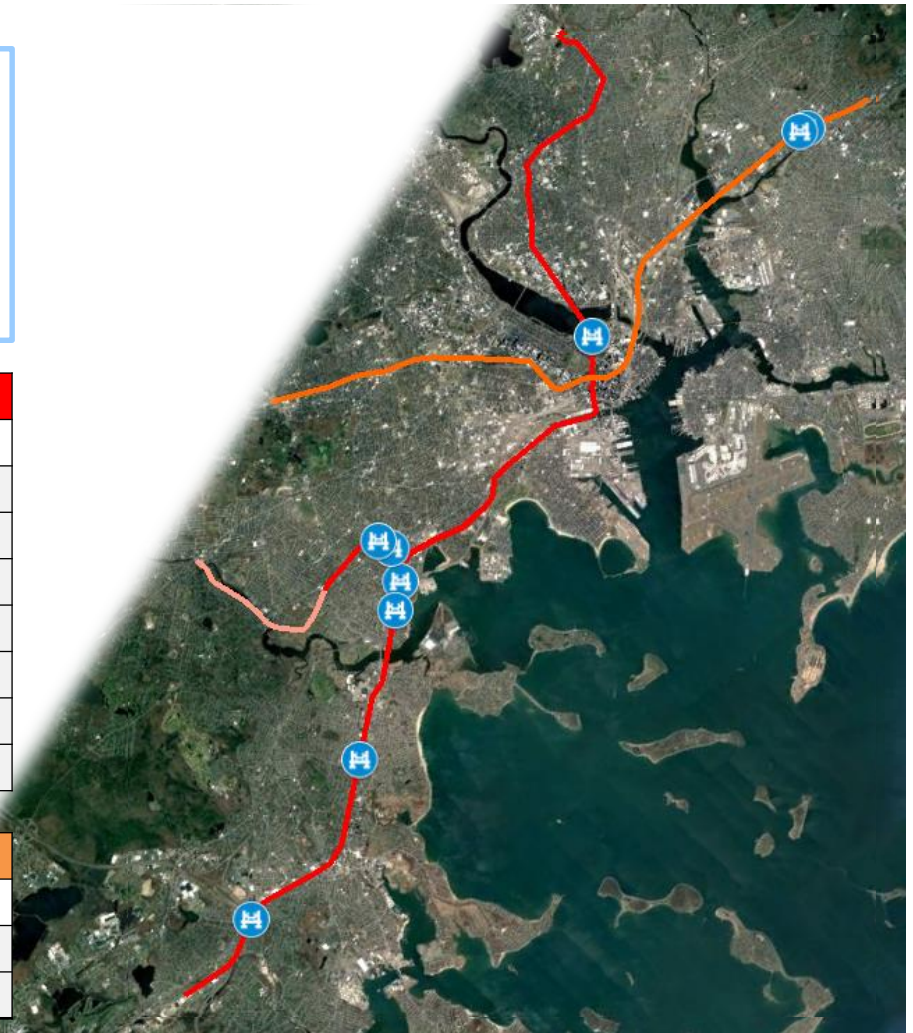
Bridge Repairs

- Granite Spur-B-21-069 (A23)
- Conley St.-B-16-136 (A38)
- Fields Corner Busway-B-16-418 (A3N)
- Wollaston Station-Q-01-028 (74K)
- Victory Rd -B-16-134 (A36)
- Geneva Ave-B-16-142 (A3D)
- Long Fellow Approach - Interim Repairs

Orange Line

Bridge Repairs

- Charles Street-M-01-003 (85)
- Adams Street-M-01-002 (85J)





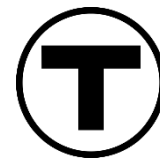
Vehicle Procurement & Improvement Program Collaboration

- Early involvement and collaboration with preparation of the Infrastructure Improvement Strategic Program Plan lead to:
 - Definition of support categories: testing, storage, maintenance and reliability
 - Interim milestones to support the vehicle arrival
 - Scope in the Improvements Program to accommodate maintenance of the New Vehicle Features (overhead platforms, vehicle diagnostic room, Wifi, etc.)
- Coordination meetings with Program Managers and PM/CM Interface Manger
- Development of vehicle storage models to analyze storage impacts due to both New Vehicle commissioning schedule and construction contracts in the Infrastructure Improvements Program.
- Pilot Vehicle Delivery Assessment and logistic coordination
- Assessment of Vehicle Delivery at Cabot Yard proposed delivery track



Program Collaboration - Pilot Vehicle Delivery





Collaboration – Vehicle Delivery at Proposed Red Line Delivery Track

**Delivery
Track –
Access to
Cabot Yard
Test Track**

